



MAIL STOP APPEAL BRIEF PATENTS
Atty. Docket No. 1501-1111
PATENTS

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE BEFORE
THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re application of

Jan ERIKSSON

Serial No. 09/581,911

Appeal No. _____

Filed June 19, 2000

GROUP 3643

ANIMAL RELATED APPARATUS

APPEAL BRIEF

MAY IT PLEASE YOUR HONORS:

(i) Real Party in Interest

The real party in interest in this appeal is the assignee, DeLaval Holding AB of Tumba, Sweden.

(ii) Related Appeals and Interferences

None.

(iii) Status of Claims

Claims 1-12 and 16-20 are pending, from whose final rejection this appeal is taken. Claims 13-15 were cancelled.

(iv) Status of Amendments

There are no outstanding amendments. The claims have not been amended since the April 5, 2006 amendment.

These claims were finally rejected by the Official Action mailed June 14, 2006 (the "Official Action").

(v) Summary of Claimed Subject Matter

Figure 1 illustrates a robot (6) with arm (8) that moves animal related devices (12a-milking equipment) toward an animal (cow), for performing an operation associated with the animal and the installed animal related device (milking). The invention provides for improved maintenance of such a system by associating with each of the animal, the animal related device, and the robot: 1) a registering means (20a), 2) a control means, and 3) a predetermined threshold value.

The registering means accumulates a running value. The control means generates a signal when a predetermined threshold value of the running value is reached. The predetermined threshold value is set for each of the animal related device, the robot, and the animal related operation.

Correspondingly, the registering means registers the running value of: 1) each animal related device, 2) the robot, and 3) the running time of the complete animal related operation. For example, the animal related device may be a milking pulsator, the registering means tracks the pulsator running time, and the control means signals when the pulsator reaches its predetermined cumulative running time.

Alternatively, the running value could be the number of pulsations generated by the pulsator.

Accurate monitoring of running values and timely signaling when reaching a threshold value allows for efficient maintenance of equipment or completion of a task when monitoring the running time of an animal operation.

Claims 1, 11, and 12 are independent.

The invention, as recited by claim 1, comprises a robot (element 6 of Figures 1-2) for performing an animal related operation; a control means (element 23 of Figures 2-3) controlling the robot; and at least one animal related device (elements 12a, 12b of Figures 1-3) controlled by the control means, with the robot being provided with a robot arm (element 8 of Figures 1 and 3) adapted to move the animal related device towards an animal (specification page 1, lines 5-9).

As recited by claim 1, the invention further includes a registering means (elements 20a, 20b,...,20g of Figures 1-3) provided for registering a cumulative running value of each of the at least one animal related device, the robot, and the complete animal related operation so that separate cumulative running values are accumulated for each of the at least one animal related device, the robot, and the complete animal related operation (specification page 1, line 22 through page 2, line 2).

The invention as recited by claim 1 also includes that the control means is adapted to generate a signal when a respective predetermined threshold value has been reached for any of the cumulative running value of the at least one animal related device, the robot, and the complete animal related operation, wherein each respective predetermined threshold value is set for each of the at least one animal related device, the robot and the complete animal related operation, each the respective predetermined threshold value is indicative that a service has to be performed on a corresponding one of the at least one animal related device, the robot, and the complete animal related operation (specification page 2, line 5 through page 3, line 4).

Claim 1 concludes by reciting that each time another of the animal related operation is performed, each registering means is activated and registers further cumulative running values, the further cumulative running values being added to previous, stored cumulative running values corresponding to previously performed animal related operations (specification page 4, lines 5-9, lines 21-25; page 5, line 29 through page 7, line 2, especially page 6, line 30 through page 7, lines 2).

As recited by claim 11, the invention includes a robot (6) for performing an animal related operation; at least one animal related device (12a, 12b) for use in performing the

animal related operation; a control means (23) directing operation of the robot and selecting the at least one animal related device for the robot to perform the animal related operation; a robot arm (8) associated with the robot and adapted to move the animal related device towards an animal (specification page 1, lines 5-9).

Claim 11 recites a registering means provided for automatically registering a cumulative operating running value of each of the at least one animal related device, the robot, and a complete animal related operation so that separate cumulative running values are accumulated for each of the at least one animal related device, the robot, and the complete animal related operation (specification page 1, line 22 through page 2, line 2).

Claim 11 recites that the control means is adapted to generate a maintenance-need signal when reaching predetermined threshold values corresponding to each of i) the cumulative running value of the at least one animal related device, ii) the cumulative running value of the robot, and iii) the cumulative running value of the device used in the animal related operation, so that the signal is automatically generated by the control means when the registering means registers any one of the cumulative running values reaching the corresponding predetermined threshold value (specification page 2, line 5 through page 3, line 4).

As with claims 1 and 11, claim 12 recites a milking robot (6) for performing an animal related operation related to milking an animal; a control means (23) directing operation of the robot; at least one animal related device (12a, 12b) operatively connected with the control means; and a robot arm (8) associated with the robot and adapted to move the animal related device towards an animal specification page 1, lines 5-9).

Claim 12 also recites a registering means (20a, 20b,...,20g) provided for automatically registering cumulative operating running values for each of i) the at least one animal related device, ii) the robot, and iii) of a complete animal related operation (specification page 1, line 22 through page 2, line 2).

Claim 12 concludes by reciting that the control means is adapted to generate a maintenance-need signal when reaching a predetermined threshold value corresponding to any of the cumulative running values, so that the signal is automatically generated by the control means when the registering means registers any of the cumulative running value reaching the corresponding predetermined threshold value (specification page 2, line 5 through page 3, line 4).

(vi) Grounds of Rejection to be Reviewed on Appeal

A first grounds of rejection on appeal is whether claims 1-4, 8-12, 19, and 20 were properly rejected as unpatentable under §103 as obvious over JAKOBSON et al. 4,508,058 in view of PAINE 4,613,939 and WILLIAMS 5,754,451.

A second grounds of rejection on appeal is whether claims 5-7 and 16-18 were properly rejected as unpatentable under §103 as obvious over JAKOBSON et al. in view of PAINE and WILLIAMS, and in further view of INNINGS et al. (WO 96/36212).

(vii) Arguments

Arguments Concerning the First Ground of Rejection

As to the first ground of rejection, claims 1-4 and 8-10 stand together; claim 11 stands alone, and claims 12 and 19-20 stand together.

Claim 1

The present rejection arises from improperly application of hindsight. The analysis is not whether the prior art had the technology to achieve the invention, but rather the invention is taught or suggested by the relevant prior art.

Numerous Federal Circuit decisions emphasize that obviousness rejections over a combination of elements found in two or more prior art references are improper unless the prior

art suggests their a combination. *E.g. McGinley v. Franklin Sports, Inc.*, 262 F.3d 1339, 1351-52, 60 USPQ2d 1001, 1008 (Fed. Cir. 2001) (" 'the central question is whether there is reason to combine [the] references,' a question of fact drawing on the *Graham* factors"); *In re Kotzab*, 208 F.3d 1365, 1370, 54 USPQ2d 1308, 1316 (Fed. Cir. 2000) ("to establish obviousness based on a combination of the elements disclosed in the prior art, there must be some motivation, suggestion or teaching of the desirability of making the specific combination that was made by the applicant.").

In re Dembiczak, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999) ("Our case law makes clear that the best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is a rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references.") ("The range of sources available [to show a suggestion, teaching, or motivation to combine], however, does not diminish the requirement for actual evidence. That is, the showing must be clear and particular."

"When the incentive to combine the teachings of the references is not readily apparent, it is the duty of the examiner to explain why of the reference teachings are proper." *Ex parte Skinner*, 2 USPQ2d 1788, 1790 (Bd. App. & Int'f 1986), see also *Ex parte Clapp*, 277 USPQ 972, 973 (Bd.

App. & Int'f 1985) (noting that, to support obviousness, "either the references must expressly or impliedly suggest the claimed combination or the examiner must present a convincing line or reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references. . . . [S]implicity and hindsight are not proper criteria for resolving the issue of obviousness.")

The Examiner has not satisfied these requirements.

JAKOBSON fairly discloses the recited robot for moving an animal related device towards an animal using a robot arm. However, as admitted by the Examiner on Official Action page 2, last line and first three lines of page 3, JAKOBSON does not disclose:

- 1) the recited registering means for registering cumulative values,
- 2) the recited control means to generate a signal reaching the predetermined threshold values, or
- 3) the recited predetermined threshold values.

What should be emphasized here is that the recited predetermined threshold values are not only for the animal related device but also for each of the robot and for the animal related operation. The claim requires separate cumulative running values for each of the device, the robot, and the related operation and that there are respective

predetermined threshold values for each of the device, the robot, and the related operation.

The Examiner has offered PAINE as teaching "establishing a predetermined threshold value for machinery components, registering the cumulative running value, and signaling when the threshold is reached" (Official Action page 3, lines 3-6). This is more than PAINE fairly teaches.

PAINE fairly teaches the use of electronic hourmeter devices to notify users when an apparatus has reached a certain number of run hours (abstract, column 1, lines 7-12). Thus, although it is true that PAINE teaches to have a registering means in order to register a cumulative running time for an apparatus, PAINE does not teach predetermined threshold values for discrete parts of a system and rather only teaches to notify that the whole apparatus (vehicle) should undergo services after a predetermined time. Nor does PAINE teach monitoring running time related to an operation, the operation time being separate from the apparatus running time. The PAINE invention is far short of the recited invention.

There is no teaching in PAINE to maintain separate cumulative running values, one cumulative running value for each functioning device, another cumulative running value for a robot that moving one of the devices, and still another cumulative running value for an overall related operation.

Further, there is no teaching in PAINE to have several threshold values, one threshold value for each functioning device, another threshold value for a robot that moving one of the devices, and still another threshold value for an overall related operation.

The Examiner implicitly acknowledges the shortcomings of PAINE in offering WILLIAMS as teaching that it is known to monitor components of a mechanical system individually.

WILLIAMS teaches to monitor individual components of a manufacturing system for a fault condition (abstract). Plural such components may be monitored for cycle counts (column 2, lines 1-10). But consider the automated manufacturing environment that the system of WILLIAMS is intended to be used in. Further, WILLIAMS does provide for registering a cumulative value of a complete related operation in which the plural components are used or to generate a signal when a predetermined threshold value has been reached with respect to the related operation.

As discussed above, the question of obviousness needs to be considered in the context of the invention and the fair related art. One should consider the invention in the context recited, i.e., a milking robot and milking an animal.

In this context, JAKOBSON is fair prior art. However, the secondary references are far from the art of the present invention and of JAKOBSON. PAINE relates to industrial

vehicles (abstract) and WILLIAMS relates to manufacturing equipment and systems (Figure 1 and technical field). PAINE and WILLIAMS are non-analogous references which the Examiner has sought out and uses with hindsight to argue that the invention is obvious.

When it concerns a milking robot which may have to undergo service, the service man could easily check the invention's different registering means and check the respective cumulative running value against the associated threshold value. If a specific running value of a registering means is close to the threshold value associated with the registering means for a specific component, the service man could have a closer look to the component in question.

However, if the registering means was recently reset, an indication that the component in question was recently replaced or repair work has recently been performed on this component, the service man could skip checking that component. This milking robot is a sophisticated piece of machinery and service has to be performed by educated people.

This approach is not within the related art of the invention. Further, this is in contrast to PAINE, where a single parameter serves as a metric for "giving the entire device a look over" and WILLIAMS where cycle counts are maintained.

The animal related device could for example be a teat cup, a teat location device and a teat cleaning device. The teat cup does not have to be carried by the robot arm simultaneously as the cleaning device. Moreover, the running value of the teat cup may accumulate differently from the running value of the teat cleaning device. Thus, the invention recognizes the environment of performing animal related operations with the robot automation and addresses problems specific thereto. PAINE and WILLIAMS do not relate to this art.

See that claim 1 recites the predetermined threshold value being set for each of the at least one animal related device, the robot and the complete animal related operation. The claim requires the Examiner show that establishing predetermined threshold values for all three of these items is obvious. It is not enough to show that one of the listed items would be obvious.

For all these reasons, the obviousness rejection fails and the rejection is improper.

Claim 11

The argument as to claim 1 applies.

Claim 11 also requires "a registering means provided for automatically registering a cumulative operating running value of each of said at least one animal related device, said robot, and a complete animal related operation so that

separate cumulative running values are accumulated for each of said at least one animal related device, said robot, and said complete animal related operation". As argued above, the prior art does not teach this feature.

Further claim 11 requires that "said control means is adapted to generate a maintenance-need signal when reaching predetermined threshold values corresponding to each of

i) said cumulative running value of said at least one animal related device,

ii) said cumulative running value of said robot, and

iii) said cumulative running value of said device used in said animal related operation,

so that said signal is automatically generated by said control means when said registering means registers any one of said cumulative running values reaching said corresponding predetermined threshold value".

Claim 11 clearly requires generating a maintenance-need signal when reaching predetermined threshold values corresponding to each of the cumulative running value of i) the animal related device, ii) the robot, and iii) the animal related operation. This level of complexity is not taught or suggested by the prior art.

Claim 11 is therefore non-obvious and the rejection improper.

Claim 12

The argument as to claim 1 applies.

Claim 12 is specific to a milking robot and milking an animal. In this context, claim 12 requires a control means adapted to generate a maintenance-need signal when reaching a predetermined threshold value corresponding to any of the cumulative running values, so that the signal is automatically generated when the registering means registers any of the cumulative running value reaching the corresponding predetermined threshold value.

The claimed invention, in the specific context of a milking robot and milking an animal, is not obvious and the rejection is therefore improper.

Arguments Concerning the Second Ground of Rejection

As to the second ground of rejection, claims 5-7 and 16-18 stand together.

INNINGS fairly show a pulsator, a teatcup with movement sensor, and an alarm to signal a malfunction in response to the sensor sensing a movement of the teatcup liner.

More specifically, INNINGS fairly teach an alarm to signal a malfunction in response to the sensor sensing an abrupt movement of the teatcup liner when the teatcup liner moves to an open or closed position. Further, see the

Abstract of the reference which clearly discloses that "[i]f the sensed movement does **not** fulfill a predetermined condition, a malfunction is signaled."

The teaching of INNINGS is exactly opposite to that recited. That is, claim 1 recites to generate a signal when a predetermined threshold value has been reached whereas INNINGS teaches to signal if the predetermined condition is not fulfilled.

Further, the alarm is not related to the running value of the pulsator (claim 5), e.g., the running time of the pulsator (claim 6), or the number of pulsations generated (claim 7).

There is no disclosure as to a control means being adapted to register the cumulative running time value of said pulsator per claim 5.

INNINGS fails to teach all the recitations of claims which are acknowledged to be missing from JAKOBSON. Accordingly, the combination fails to render obvious these claims.

Thus, the obviousness rejection fails and is therefore improper.

Conclusion

Reference is made to the Response to Arguments section of the Official Action, beginning at the bottom of page 6 where the Examiner states that "[t]he Jakobson reference was cited merely to teach the notoriously old and well-known components of an automated milking system. The Paine reference was cited to teach that it is known to select mechanical devices and to register a predetermined threshold value and to signal mechanical devices and to register a predetermined threshold value and to signal when the cumulative running value has reached the predetermined threshold value as a preventive maintenance system."

At best, the Examiner has shown that one of skill, being aware of the present invention could make the present invention. What the Examiner has not shown is that one of skill, being only aware of "the notoriously old and well-known components of an automated milking system" would find the claimed invention obvious. In view of foregoing, it follows that the obviousness rejections are improper and should be reversed.

Lastly, it is pointed out that this case was previously appealed, with JAKOBSON being the primary reference. The new rejections are based on secondary references that are no better than the previous rejections which were reversed by the Board. The present rejections

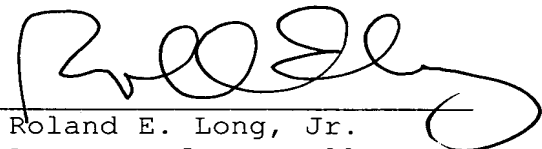
should also be reversed and, since the Examiner has not found art which renders the claims obvious, the claims should be allowed.

Reversal of the obviousness rejections is therefore earnestly requested.

Respectfully submitted,

YOUNG & THOMPSON

By

A handwritten signature in black ink, appearing to read 'Roland E. Long, Jr.', written over a horizontal line.

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(viii) **Claims Appendix**

1. An animal related apparatus, comprising:

a robot (6) for performing an animal related operation;

a control means (23) controlling said robot; and

at least one animal related device (12a, 12b) controlled by said control means,

said robot being provided with a robot arm (8) adapted to move said animal related device towards an animal;

a registering means (20a, 20b,...,20g) provided for registering a cumulative running value of each of said at least one animal related device, said robot, and said complete animal related operation so that separate cumulative running values are accumulated for each of said at least one animal related device, said robot, and said complete animal related operation,

said control means being adapted to generate a signal when a respective predetermined threshold value has been reached for any of the cumulative running value of said at least one animal related device, said robot, and said complete animal related operation; and wherein

each said respective predetermined threshold value is set for each of said at least one animal related device, said robot and said complete animal related operation, each

said respective predetermined threshold value being indicative that a service has to be performed on a corresponding one of said at least one animal related device, said robot, and said complete animal related operation, and

each time another of the animal related operation is performed, each registering means is activated and registers further cumulative running values, the further cumulative running values being added to previous, stored cumulative running values corresponding to previously performed animal related operations.

2. An apparatus according to claim 1, characterised in that a separate registering means (20a, 20b,...,20g) is adapted to register the running value of said at least one animal related device.

3. An apparatus according to claim 1, characterised in that said registering means (20a, 20b,...,20g) is adapted to register the running value of a driving means (22) of said robot (6).

4. An apparatus according to claim 1, characterised in that said running value is the running time of said complete animal related operation.

5. An apparatus according to claim 1, characterised in that

said animal related device comprises milking equipment having a teatcup (12a) provided with a shell and a liner forming an intermediate space;

said space being connectable to a source of vacuum (24) via a pulsator (26) for creating a pulsating vacuum,

said pulsator being associated with said control means (23), and

said control means being adapted to register the cumulative running value of said pulsator.

6. An apparatus according to claim 5, characterised in that said running value is running time of said pulsator (26).

7. An apparatus according to claim 5, characterised in that said running value is a number of pulsations generated by said pulsator (26).

8. An apparatus according to claim 1, characterised in that said animal related device comprises a teat location device (14) and said running value being running time thereof.

9. An apparatus according to claim 1, characterised in that said animal related device comprises a teat cleaning

device (12b) and said running value being running time thereof.

10. An apparatus according to claim 1, characterised in that

said apparatus further comprises a gate means (18) for restricting movement of an animal from an animal space (4);

said gate means (18) being opened and closed by means of a driving means (19); and

said running value being said running time of said driving means.

11. An animal related apparatus, comprising:

a robot (6) for performing an animal related operation;

at least one animal related device (12a, 12b) for use in performing the animal related operation;

a control means (23) directing operation of said robot and selecting the at least one animal related device for the robot to perform the animal related operation;

a robot arm (8) associated with said robot and adapted to move said animal related device towards an animal;

a registering means provided for automatically registering a cumulative operating running value of each of said at least one animal related device, said robot, and a

complete animal related operation so that separate cumulative running values are accumulated for each of said at least one animal related device, said robot, and said complete animal related operation, wherein,

said control means is adapted to generate a maintenance-need signal when reaching predetermined threshold values corresponding to each of

i) said cumulative running value of said at least one animal related device,

ii) said cumulative running value of said robot, and

iii) said cumulative running value of said device used in said animal related operation,

so that said signal is automatically generated by said control means when said registering means registers any one of said cumulative running values reaching said corresponding predetermined threshold value.

12. An animal related apparatus, comprising:

a milking robot (6) for performing an animal related operation related to milking an animal;

a control means (23) directing operation of said robot;

at least one animal related device (12a, 12b) operatively connected with said control means;

a robot arm (8) associated with said robot and adapted to move said animal related device towards an animal;

a registering means (20a, 20b,...,20g) provided for automatically registering cumulative operating running values for each of i) said at least one animal related device, ii) said robot, and iii) of a complete animal related operation, wherein,

said control means is adapted to generate a maintenance-need signal when reaching a predetermined threshold value corresponding to any of said cumulative running values, so that said signal is automatically generated by said control means when said registering means registers any of said cumulative running value reaching said corresponding predetermined threshold value.

16. The apparatus of claim 12, wherein,

said animal related device comprises milking equipment having a teatcup (12a) provided with a shell and a liner forming an intermediate space,

said space being connectable to a source of vacuum (24) via a pulsator (26) for creating a pulsating vacuum,

said pulsator being associated with said control means (23), and

said control means being adapted to register the cumulative running value of said pulsator.

17. The apparatus of claim 16, wherein, said running value is running time of said pulsator (26).

18. The apparatus of claim 16, wherein, said running value is a number of pulsations generated by said pulsator (26).

19. The apparatus of claim 12, wherein, said animal related device comprises a teat location device (14) and said running value is a running time thereof.

20. The apparatus of claim 12, wherein, said animal related device comprises a teat cleaning device (12b) and said running value is a running time thereof.

(ix) **Evidence Appendix**

None.

(x) **Related Proceedings Appendix**

None.